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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,925	01/16/2004	Kiyoshi Satoh	ASMJP.055C1	8224

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EXAMINER

KORNAKOV, MICHAIL

ART UNIT PAPER NUMBER

1746

DATE MAILED: 01/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/759,925

Applicant(s)

SATOH ET AL.

Examiner

Michael Komakov

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,11 and 23-39 is/are pending in the application.
- 4a) Of the above claim(s) 23-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1,11 and 23-39 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>09/15/05;12/27/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants' amendment, dated 11/03/2005, has overcome objections to drawings and rejection under 35 USC 112, first paragraph and the indicated objections and rejection are withdrawn. The cancellation of claims 2-10, 12-22 and the introduction of new claims 23-39 is noticed.

2. Newly submitted claims 23-39 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The originally presented invention and an invention recited by newly submitted claims 23-39 are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process of cleaning a CVD chamber can be practiced by hand and the recited apparatus can be used for coating of different substrates, which is materially different from the instantly claimed cleaning process.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 23-39 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03. Claims 1 and 11 are examined on the merits.

3. Claim 1 as amended recites the limitation "a surface of the piping that is exposed to the activated species is a fluorine passivated surface". This limitation was not previously presented.

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fong et al (U.S. 5,812,403) in view of Smith et al (U.S. 6,150,628).

Fong teaches method(s) of cleaning CVD reaction chamber with cleaning gas provided through a remote plasma discharge chamber comprising: dissociating cleaning gas within the applicator tube, thus creating a plasma in the remote discharge chamber, wherein the applicator tube is made of material resistant to etching by plasma radicals; supplying activated species from the remote plasma discharge chamber to CVD reaction chamber through the fluid passage conduit the inner surface of which is covered with PTFE liner, resistant to etching by fluorine radicals (reads on "a surface of the piping that is exposed to the activated species is a fluorine passivated surface"); opening a gate valve on the conduit after conducting a CVD reaction, thus allowing plasma radicals to flow into CVD chamber through the fluid passage (the entire disclosure of Fong and specifically Fig. 3, 4, 16; col. 14, lines 11-31; col. 36, lines 31-56; col. 37, lines 10-67). Fig. 3 shows opening of the fluid passage upon opening the gate valve. Fong also teaches that in some embodiments the gate valve is not used at all. Therefore, even if the full opening of the passage upon opening the gate valve is not clearly recognized by the skilled in the art, Fong motivates the skilled in the art to

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operate the gate valve to completely open the fluid passage by indicating that plasma radicals may flow through the fluid passage directly into the CVD reaction chamber (col.37, lines 54-65). Regarding claim 11, Fong teaches closing the gate valve after cleaning (paragraph bridging col. 56 and 57; col.57).

While recognizing the use of material resistant to etching by plasma radicals, created within the applicator tube, Fong does not specifically name the anodized aluminum. However, the use of anodize aluminum for the protection of plasma chamber surfaces is known in the art. Thus, Smith teaches remote plasma cleaning of CVD chamber, utilizing fluorine containing plasma species. Smith indicates the use of anodized aluminum as a material resistant to etching by plasma radicals within the remote plasma source (Abstract, col.2, lines 33-36,46-50; col.8, lines 56-61).

Therefore, since both Fong and Smith indicate the use of fluorine containing plasma species, since Fong and Smith are both concerned with materials for remote plasma chamber and Smith provides for the use of anodized aluminum, one skilled in the art motivated by Smith would have found obvious to utilize anodized aluminum for the applicator tube in order to maintain resistance of applicator tube surfaces to the fluorine containing plasma species in the teaching of Fong with the reasonable expectation of success.

Response to Arguments

6. Applicant's arguments with respect to claims 1 and 11 have been considered but are moot in view of the new ground(s) of rejection. However, some issues, raised by Applicants in their remarks are addressed below.

Applicants argue that "Prior to the present application, various forms of restricting the flow of gas were routinely taught and considered desirable. For example references in the art taught the use of "flow restrictors" which slowed down the flow, rather than accelerating it see, e.g., U.S. Pat. No. 6,274,058. Additionally, U.S. Pat. No. 5,788,778 suggests the use of a flow restrictor" to prevent the free flow of gas in various processes. Applicants note that Shang (EP 0697467) teaches that a filter 56 should be placed between the remote chamber 46 and the processing chamber. A filter will result in the restriction of the flow of gas." In reply, it is noted that flow restrictors within the previously applied reference to U.S. 6,274,058 have not been located. The U.S. 5,788,778 was not used for the rejection of previously presented claims. With regard to EP 0697467, it is noted that the features upon which applicant relies (i.e., flow restriction) was not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Therefore, restricting of flow does not prevent the skilled artisan from utilizing a valve within the teaching of EP 0697467 and opening the valve as was recited.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kornakov whose telephone number is (571) 272-1303. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "M. Kornakov", with a long, sweeping horizontal stroke extending to the right.

Michael Kornakov
Primary Examiner
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01/12/2006